

REMARKS

Claims 1, 8-10, 17, and 18 have been examined. Claims 4-7 and 13-16 have been withdrawn from consideration as being directed to a non-elected species. Claims 2, 3, 11, and 12 have been canceled without prejudice or disclaimer.

Claim Rejections under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1, 8-10, 17, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Marx et al. (U.S. Patent No. 5,376,759), Ishigaki et al. (U.S. Patent No. 4,758,922) and Akiba et al. (U.S. Patent No. 6,353,540). For the following reasons, Applicant traverses these rejections.

Applicant submits that independent claims 1 and 10 have been amended to define more clearly and particularly Applicant's invention. In addition, Applicant submits that claims 1 and 10, as amended, neither raise issues of new matter nor present new issues requiring further consideration or search.

With respect to independent claims 1 and 10, Applicant submits that neither Marx, Ishigaki, nor Akiba, either alone or in combination, teaches or suggests all of the recitations of Applicant's new and unique claimed combination. For example, Applicant defines a new and unique combination of elements which form a substrate. Included among the recitations, independent claims 1 and 10 contain surface layers which are kept to the ground potential and cover the surface of a substrate except pads (a part of circuit) and their narrow peripheral. With such surface layers, because the surface layers cover a surface of a circuit board as much as

possible even underneath an IC chip, it is possible to minimize electromagnetic emission from the circuit board as much as possible.

On the other hand, Marx discloses a multiple layer printed circuit board 60 which has top and bottom outermost conductive layers 20 and 22. The top and bottom outermost conductive layers 20 and 22 are connected to electrical ground potential. However, provision of the conductive layer 20 is excluded from the entire integrated circuit position 18. That is, the conductive layer 20 does not cover right under an integrated circuit mounted on the integrated circuit position 18. Such a circuit board cannot shield electromagnetic emission from the integrated circuit position 18. To make matters worse, the electromagnetic emission from the integrated circuit position 18 deteriorates an operation of the integrated circuit mounted on the integrated circuit position 18. Thus, it is clear that Marx neither teaches nor suggests the surface layers of the present invention, which cover the surface of a substrate except pads and their narrow peripheral.

Moreover, Ishigaki et al. and Akiba et al., which merely disclose an outer shield 13 and a resistor 706-12, respectively, clearly fail to teach or suggest the surface layers of the present invention.

Thus, Applicant submits that neither Marx, Ishigaki, nor Akiba, either alone or in combination, teaches or suggests all of the recitations of Applicant's new and unique claimed combination, and therefore, the rejection of independent claims 1 and 10 should be withdrawn.

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In addition, claims 8, 9, 17, and 18 are patentable over the combination of the cited references at least by virtue of their dependency from independent claim 1, and therefore, the rejections of these claims also should be withdrawn.

Moreover, Applicant submits that claims 4-7 and 13-16, which depend from generic claim 1, should be rejoined. These claims also are in condition for allowance at least by virtue of their dependency from independent claim 1.

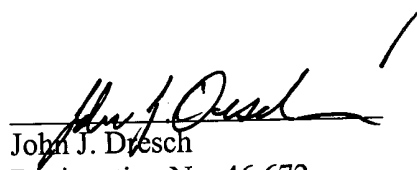
Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Twice Amended) A substrate comprising:

pads which are provided on the surface of said substrate;

surface layers which are kept to the ground potential and cover the surface of said substrate except said pads and their narrow periphery, wherein said surface layers include a top main surface and a bottom main surface; and

conductive elements which electronically connect said top main surface and said bottom main surface and cover an entire side of said substrate with said top main surface and said bottom main surface.

10. (Thrice Amended) A substrate comprising:

a part of circuit which is provided on the surface of said substrate;

surface layers which are kept to the ground potential and cover the surface of said substrate except said part of circuit and its narrow periphery, wherein said surface layers include a top main surface and a bottom main surface; and

conductive elements which electronically connect said top main surface and said bottom main surface and cover an entire side of said substrate with said top main surface and said bottom main surface.